

Volume 50
Summer 2015

Water Lines



Water Lines is the resource newsletter of the Nevada Water and Wastewater Operator's Forum

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Announcements

Obtaining Contact Hours and Continuing Education Units (CEUs) is a crucial requirement for every Water Operator that works in the State.

These classes allow Water Operators to further develop their skill levels. They will not only be better prepared to provide and protect safe drinking water, but will become more familiar with new developments in their field as technology and regulations change.

The NDEP’s Bureau of Safe Drinking Water has a Calendar of Events for approved contact hour classes for certification renewal. The NDEP requires operators to take courses from International Association of Education Training (IACET) authorized providers or accredited colleges in order to apply for the Grade 3 & 4 exams.

Change of Mailing Address Requested:

Operator Certification Administrators have noted that a number of certificates are being returned to the State because Operators have not updated their mailing addresses after moving. Operators are asked to promptly notify the State when they have changed addresses. Please contact Susan Bunch with the Bureau of Safe Drinking Water at: susan_bunch@ndep.nv.gov or 775-687-9477

Wastewater Exam dates for 2015/16:

Exam date - 12/17/15 Deadline - 11/17/15

Exam date - 3/17/16 Deadline - 2/17/16

Exam date - 6/16/16 Deadline - 5/16/16

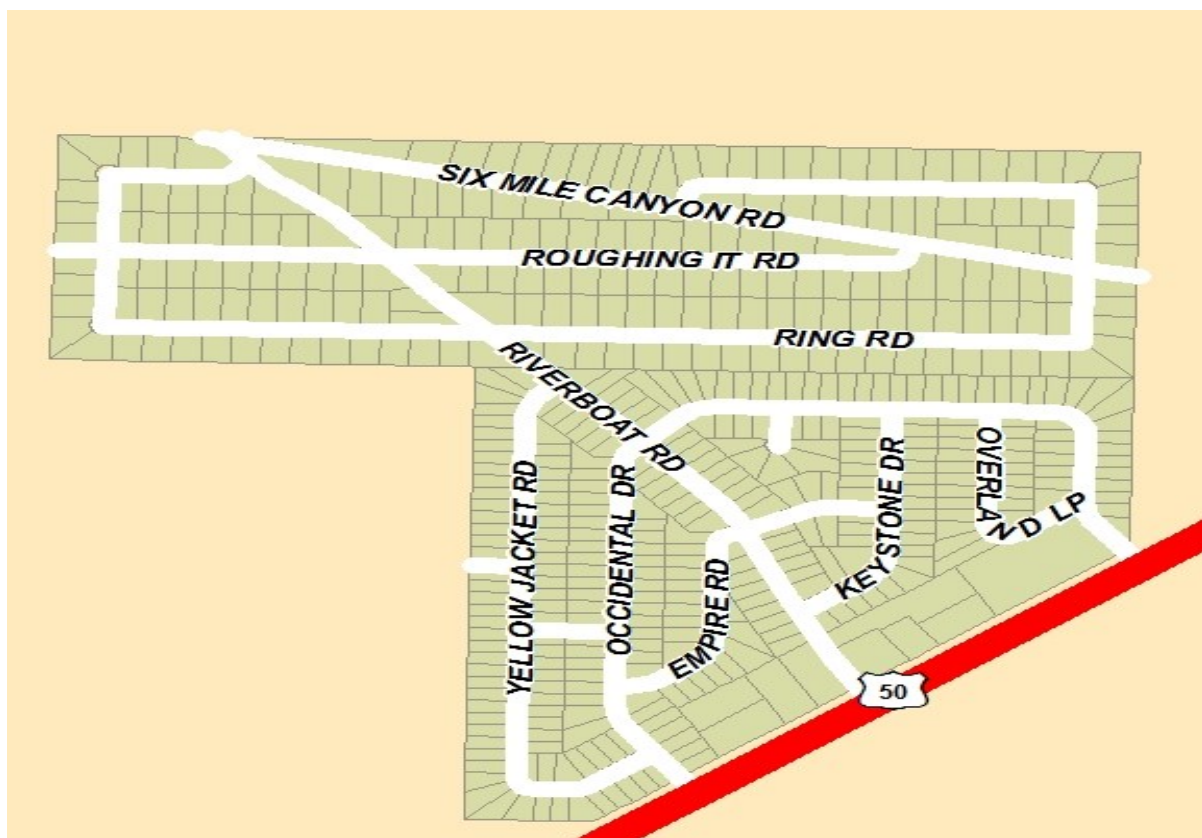
Work It! Q & A

1. Water pressure at an upper point along a pipeline is measured at 57 psig. At a point 300 yards away and forty-five feet lower in elevation, what pressure would you expect to observe at 4:00 a.m. when usage is at its daily low and all of the storage reservoirs are full? _____ psig
2. The water level in a 50-ft diameter tank is now 18 ft. Two booster pumps are taking water from the tank at a rate of 220 gpm each. If the well feeding the tank is producing 1,020 gpm, what is the shortest time from now that the tank could be filled to the 23 ft. level?
 - A. 1.2 hours
 - B. 2.1 hours
 - C. 3.8 hours
 - D. 6.3 hours
3. A positive pressure of at least 2 inches of water column must be maintained when withdrawing sludge from an anaerobic digester. This is done by -
 - A. Withdrawing slowly so that gas produced will make up for removed material
 - B. While mixing, rapidly pumping raw sludge into the digester faster than withdrawing digested sludge
 - C. Pressurize by adding carbon dioxide to the digester
 - D. Withdrawing sludge only as fast as the belt filter press can be operated to dewater it
4. How much pressure, psi, is 2 inches of water column?
 - A. 2 psi
 - B. 4.62 psi
 - C. 0.07 psi
 - D. 0.38 psi

Lyon County Septic Tank Elimination Project

By: LCUD Staff

Lyon County Utilities Division (LCUD) owns and operates a public water system in the Daytona Heights (a.k.a. Dayton Valley Estates) Subdivision, located east of Dayton. This subdivision has 491 lots that range in size from approximately 0.25 acres to 0.50 acres. This subdivision does not currently have a wastewater collection system so each lot has its own individual septic tank and leach field.

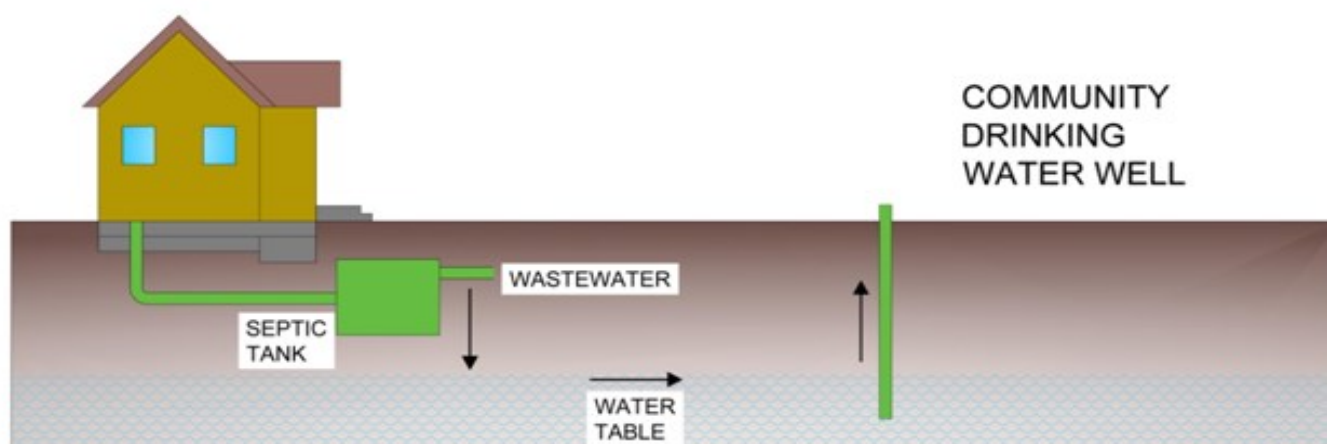


Project Area Map 1

Here is a brief history about this subdivision. In 1989 LCUD took over the developer-built, privately-owned public water system. This system was built to serve the Daytona Heights and Mark Twain 10 subdivisions. The water system consisted of 3 potable water wells, 630,000 gallons of water

Cont' - Lyon County Septic Tank Elimination Project

storage, booster pumps, and a distribution system. The well site is located at the east boundary of the subdivision. Because this subdivision is served by a community water system, the parcels were allowed to be much smaller, some as small as 11,000 square feet. As stated above, every house has a septic tank and leach field. There are roughly 491 septic tanks in a 1 mile radius within the subdivision, which is 6 times more than the current septic tank density code allows in that same area. The main reason for the septic tank elimination project is to help reduce the nitrate levels and potential for contamination of the groundwater, which provides drinking water to the community.



Groundwater Contamination Potential 1

Over the last 6 years LCUD, working with Farr West Engineering, installed numerous groundwater monitoring wells in and around the Dayton Valley Estates subdivision. The monitoring wells were installed to determine if nitrates and other contaminants from the septic tanks could be having a negative impact on the groundwater in the surrounding areas. Initial testing of the groundwater in these monitoring wells and in some private, domestic wells in the area indicated the groundwater has been impacted more than first thought. EPA Federal Primary Drinking Water Standards have established the Maximum Contaminant Level (MCL) for nitrates at 10 parts per million (ppm) at the entry point to the distribution system.

Cont' - Lyon County Septic Tank Elimination Project



LCUD Monitoring Well 1

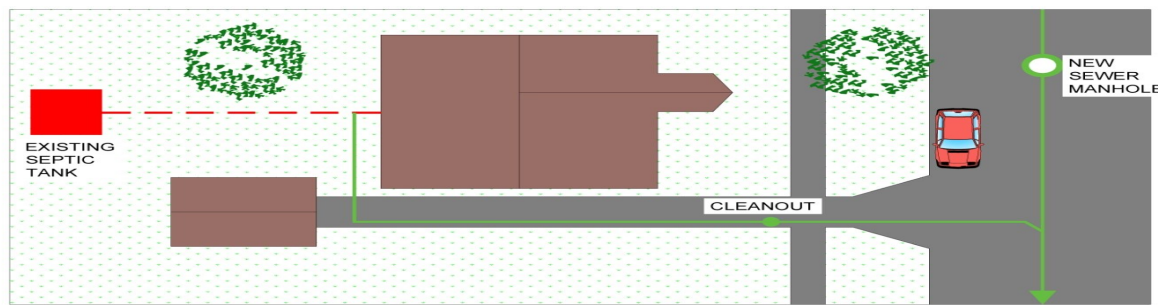
Groundwater testing in the project area has shown that the nitrate levels have increased to 17 ppm in some wells. Since LCUD began the monitoring in 2006, we saw water quality in the 3 production wells in that area steadily declining. By 2012, all 3 production wells were shut off due to increased levels of nitrates, total dissolved solids, and sulfates, which had increased to the point that they, too, were close to exceeding the MCLs. One home in the monitoring area on a private well had nitrate levels of 14 ppm and was disconnected from their private well and connected to the County water system for health reasons.

Lyon County applied for and received a combination of Army Corps of Engineers, USDA Rural Development, State Revolving Fund, and CDBG grants and loans to install a wastewater collection

Cont' - Lyon County Septic Tank Elimination Project

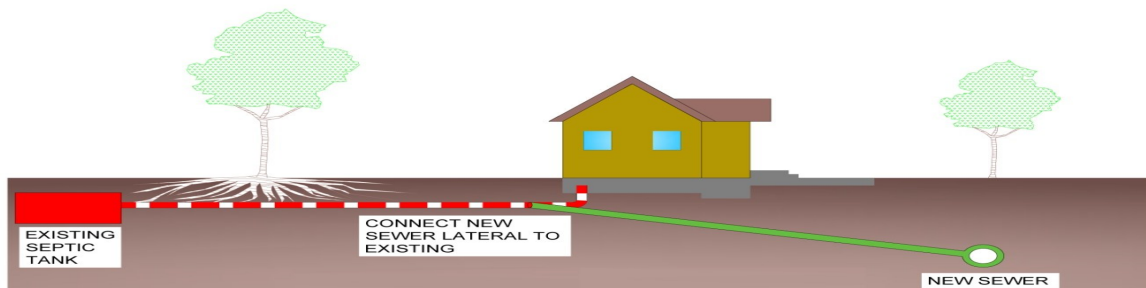
system and eliminate the septic tanks with the new wastewater flows routed to the existing Rolling A Wastewater Treatment Plant. Working closely with the various agencies, a funding program was developed to cover the entire \$10 million cost of construction including: the installation of new sewer mainlines, new service lines on private property, and the proper abandonment of the individual septic tanks. The project funding also covers the cost of connection fees to the system. Rolling A is currently running at about 50% of capacity, so there is capacity at that facility to handle this new consolidation.

The project funding will save each homeowner approximately \$15,000 - \$25,000 per parcel. There will be no costs to the homeowners other than the monthly sewer use fees once they are connected to the new sewer system. The monthly sewer use fee for these subdivisions will be the same as the fee charged to the residential customers in the Dayton and Mound House service areas.



Typical Construction 1

Cont' - Lyon County Septic Tank Elimination Project



Typical Construction 2

By eliminating these 491 septic tanks, close to 85,000 gallons per day of septic tank leachate will be eliminated from the groundwater aquifer. Construction started at the end of March 2015 and is expected to take 12-16 months to complete. Once construction is complete, there will be a follow-up article on how the project progressed - what worked well and what could have been improved.

Answers to the Work It! questions

1.

$$57 \text{ psi} + (45 \text{ ft} \times 0.433 \text{ psi/ft})$$

$$57 \text{ psi} + 19.5 \text{ psi} = 76.5 \text{ psi}$$

2.

B. 2.1 hours

$$\begin{aligned} 0.785 \times 50 \text{ ft} \times 50 \text{ ft} \times (23 \text{ ft} - 18 \text{ ft}) \times 7.48 \text{ gal/ft}^3 &= \text{gallons to full} \\ &= 73,398 \text{ gallons} \end{aligned}$$

$$1,020 \text{ gpm in} - 220 \text{ gpm out} - 220 \text{ gpm out} = \text{net } 580 \text{ gpm in}$$

$$73,398 \text{ gal} \times 1 \text{ min} / 580 \text{ gal} \times 1 \text{ hour} / 60 \text{ min} = 2.1 \text{ hours}$$

3.

A. Withdrawing slowly so that gas produced will make up for removed material.

4.

C. 0.07 psi

$$(2 \text{ inches wc} \times 1 \text{ ft}/12 \text{ inches}) \times 0.433 \text{ psi/ft wc} = 0.07 \text{ psi}$$

Wastewater Operator Certifications



Congratulations to the following wastewater professionals for passing their Wastewater Treatment, Wastewater Collection, Industrial Waste Inspector and Plant Maintenance exams in June and July 2015.

WASTEWATER TREATMENT GRADES

Grade 1: Gilbert Cruz II, Taylor Fishell, Clark Phillips, Arthur Samons

Grade 2: Jennifer Diamond, Destry Myers

NEVADA INDUSTRIAL WASTE INSPECTOR

Grade 2: Ryan Miller

NEVADA PLANT MAINTENANCE

Grade 1: Gerald Kingery, Robert Rigdon, Steven Shaffer, Dave Wozynski

Grade 3: Joe Carter, Daniel Szoke, Jon Yoffee

NEVADA WASTEWATER COLLECTION

Grade 1: Johnathan Minoletti, Tyler Hess, Michael Noe

Grade 3: Jason Dukek

NEVADA WASTEWATER LABORATORY

Grade 2: Hanna Milewicz

Water Operator Certifications



Congratulations to the following water professionals passed their Water Treatment and Water Distribution exams in March and June 2015.

Water Distribution Grades:

Grade 1: Jarod Ackerland, Kevin Breckenridge, Michael Butte, Allen Camp, Cory Caven, Nick Cercek, Joshua Christensen, John Clemente, Brett Coffman, Casey Cole, James Cole, Mark Conrad, Jerry Cordova, Christopher Czech, Thomas Davis, Jennifer Downes, Roger Drum, Adrian Edwards, Justin Fike, Todd Flynt, Mathew Fretwell, Andrew Fritter, Thomas Gallegos, Erica Ghadery, Jaykelee Grant, Ryan Harrington, Malcom Harris, Casey Hilliard, Tony Howerton, Kyle Hughes, Jason Ines, Jonathan Jones, Ovila Juneau, Frank Kalenits, Kristopher Lageliers, Travis Leist, Patrick Litherland, Jose Marquez, Jeremy Martin, Thomas Maurine, Jesse Mazur, William Mountjoy, Christopher Natoli, William Odom, Stephen Peck, Tahmineh Pennington, Anthony Phelan, Clark Phillips, Andrew Porter, Craig Pribila, Jill Robinson, Ernest Romero Jr, Krista Souza, Derek Starkey, Tyler Walker, Jason Wheeler, Ryan Witte, Christopher Woods, Brian Ziser.

Grade 2: Edward Bell, Mathew Bell, Byron Brice, Michael Butte, Nick Cercek, Brett Coffman, Arron Collier, John Cox, Bernard Elvin III, Robert Herren, Jonathan Jones, Russell Lamb, Kristopher Langeliers, Antone Lebard, Travis Leist, Julia Lew, Brooke Long, Terry Maestas, Andrea Maxon, Holly McNaught, Mark Moran, William Mountjoy, Mathew Padgett, Ginger Peppard, Carl Siemer, David Speakman, Rick Vosburg, Robert

Cont' Water Operators Certified

TRAINING CALENDAR

Watkins, Charlie Wells, Martin Wildeman, Uriah Wise.

Grade 3: Bradley Baeckel, David Bannister, Jackie Boado, Gregory Brown, Jeff Cady, Paul Carballosa, Adam Carver, Chad Christiansen, Jessica Gearhart, Zachary Hills, Noah Hoefs, Brent Johnson, Jim Kerr, Terry Maestas, Ronal Nordmeyer, Patrick Quigley, John Summers, James Woodward.

Grade 4: Kiley Bradshaw, Jerome Breland, Kevin Cenicerros, Christopher Maes.

Water Treatment Grades:

Grade 1: David Bannister, Tony Buttram, Clarence Carlos, Brett Coffman, Han Dou, Jennifer Downes, Kaykelee Grant, Christopher Hoffert, Christopher Jim, Frank Kalenits, Timothy Leedy, Andrea Maxon, Travis McCarty, Mathew McCarty, Joey McCourt, Thomas McCullough, Drew Morris, Brendan Musselman, Charles O'Neill, Stephen Peck, Nathan Richardson, Daniel Sandoval, Jeremy Slama, Brett Walsh, Jason Wheeler.

Grade 2: Ryan Bowler, Christopher Calibro, Brett Coffman, Jay Flakus, Kenya Henderson, Jim Kerr, Mathew Lounsbury, Mark Moran, David Palmer, Mason Stratton, Christopher Woods.

Grade 3: Jackie Boado, Robert Devaney, Jessica Gearhart, Statler Hasley, Zachary Hills, Noah Hoefs, Theodore Jost, Bryce Twichell.

Grade 4: Jackie Boado, Brad Howald, David Musselman, Bryce Twichell

Ongoing On Site - Various Management, Board, Wastewater and Water Topics, at your request - NvRWA, <http://www.nvrwa.org/>

Contact: Bob Foerster at 775-841-4222

Upon Request: Instructor-Lead CSUSac Courses: Distribution or Treatment, 6 - 8 weekly trng. Contact NvRWA for details and to schedule. Also offering water and wastewater classes powered by SunCoast Learning Systems. Water Courses have been approved for recertification hours.

NDEP Bureau of Safe Drinking Water - training calendar for approved classes:

<http://ndep.nv.gov/dwo/main/calendar.html>

Nevada Section of the American Water Works Association. Visit the web site www.ca-nv-awwa.org for many more education opportunities

American Water College -

<http://americanwatercollege.org/>

Montana Water Center -

<http://watercenter.montana.edu/training/ob2005/default.htm>

Office of Water Programs at the California State University, Sacramento -

<http://www.owp.csus.edu/courses/catalog.php>

Check out ongoing Training from RCAC at:

<http://www.rcac.org>

Nevada Water Environment Association (NWEA) has an approved course list on their website:

<http://nvwea.org/> and they also grant blanket

approval for training from the following organizations:

NWEA online Training Calendar -

<http://nvwea.org/certification/training-opportunities>

NvRWA's Annual Conferences -

<http://www.nvrwa.org/>

Tri-State Seminar On-the-River -

<http://www.tristateseminar.com/>

Water & Wastewater Education and Training -

<http://wwet.org/>

Water Environment Federation – www.wef.org

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NV Water and Wastewater Operator's Forum Members:	Training Contacts
<p>Bob Foerster, Chair 775-841-4222 NvRWA - nvrwa@pyramid.net</p> <p>Nathan Adams, Vice Chair 775-962-5840 Pioche Public Utilities - pputilities@lcturbonet.com</p> <p>Dale Johnson 775-340-8834 City of Elko - djohnson@ci.elko.nv.us</p> <p>Ron Penrose 775-336-1300 Retired from TMWA - Tri Sage Consulting - penroserj@gmail.com</p> <p>Cameron McKay, 775-588-3548 Kingsbury GID - cam@kgid.org</p> <p>Jim Kerr 775-738-6816 Elko County Public Works - jkerr@elkocountynv.net</p> <p>Tom Georgi 702-822-8026 Las Vegas Valley Water Dist. Thomas.Georgi@lvvwd.com</p> <p>Richard (Rick) Giltner 702-567-2055 SNWA - richard.giltner@lvvwd.com</p>	<p><i>Nevada Rural Water Association</i> Videoconference classes for water system operators and managers are available in most communities. Please send requests for training to www.nvrwa.org or contact staff directly at 775-841-4222</p> <p><i>Community College of Southern Nevada Wastewater Water Technology Program</i> www.cleanwaterteam.com LeAnna Risso at 702-668-8487 or LRiso@cleanwaterteam.com</p> <p><i>WWET Training in Clark County</i> - www.wwet.org Training for water treatment and distribution system operators, wastewater treatment and collection system operators, and other professionals in these fields. Contact Jeff Butler 702-258-3296</p> <p><i>State of Nevada Water Certification Exams</i> Exam applications and fees are due to the State Bureau of Safe Drinking Water 45 days before exam dates. A proctor will contact examinees to schedule testing. Contact: Ron Penrose at 775-834-8017 for information about the exam dates. Additional information call: 775-687-9527 or http://ndep.nv.gov/bsdsw/cert_home.htm</p> <p><i>Nevada Water Environment Association</i> - www.nvwea.org Ashley or Jake Jacobson (775) 465-2045 or Certification@nvwea.org</p>